

Appl. No. 10/780,188
Response/Amendment dated October 5, 2005
Reply to Office Action of July 8, 2005

Remarks/Arguments

Claims 1-40 are pending, claims 1-18 have been allowed, claims 19, 31, 34, and 35 stand rejected on varying grounds under §102(b), and claims 20-30, 32-33, and 36-40 are objected to but deemed to recite allowable subject matter.

Claim 36 has been amended to remedy a clerical error and thus improve readability. The specification has been amended as noted above to correct various clerical errors. No new matter has been added with any of these amendments.

In view of the comments below, Applicant respectfully requests that the Examiner reconsider the present application including claims 1-40 and withdraw the rejection of these claims.

- a) Applicant notes with appreciation that the Examiner has considered the art listed on and returned an initialed copy of form SB/08A and SB/08B.
- b) The application has been rechecked and some clerical errors were discovered. The above noted amendments to the specification beginning at page 2 have been proposed in order to correct some minor typographical/clerical irregularities.

Appl. No. 10/780,188
Response/Amendment dated October 5, 2005
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c) Claims 19, 31, 34 and 35 stand rejected under 35 U.S.C. 102(b) as being anticipated by Delano et al. (US Patent No. 5,909,153).

Claim 19 is in independent form with claims 31, 34, and 35 dependent thereon.

Applicant's invention as defined by claim 19 concerns a delta sigma modulator (DSM) that is arranged to control a switching amplifier in a feedback arrangement, such that the DSM is processing signals including an input signal and a signal corresponding to an output signal from the switching amplifier at an IF frequency and yet providing an output signal suitable for driving the switching amplifier so it provides an amplified signal within an RF band. This of course requires that the output signal from the DSM include frequency components in the RF band.

With reference to claims 19, 34, & 35, the Examiner maintains that "Delano discloses a part of a communication apparatus (see Fig. 3, for example), comprising a switching amplifier (304) operable to provide an amplified signal within an RF band; and a delta-sigma modulator (302), wherein the modulator [is] operable to control the switching amplifier (304) in a feedback configuration, operable to process an input signal within an intermediate frequency band, wherein the input signal corresponding to a base band signal (input) and the amplified signal (the output of the amplifier 304), and operable to provide an output signal within the RF band to drive the switching amplifier (304) (column 2, lines 41-45)."

Applicant agrees in part with the Examiner but disagrees with the Examiner's construction of the modulator of Delano et al. Delano et al (FIG. 3 and others) does show a switching stage 304 that may be fairly construed as a switching amplifier operable to provide an

Appl. No. 10/780,188
Response/Amendment dated October 5, 2005
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amplified signal and a modulator stage 302 that may be construed as a delta sigma modulator (DSM) for controlling the switching amplifier in a feedback arrangement. However, Applicant respectfully submits Delano et al does not show or suggest a DSM operating at an intermediate frequency and a switching amplifier providing a radio frequency signal as claimed.

Applicant was not able to discern from the reference (text or figures) what frequency band the switching stage or modulator of Delano et al are expected to operate at, however lets assume *arguendo* that the switching stage operates at or within an RF band. If that is the case, the modulator 302 also appears to operate within the RF band, since the output of the switching stage is added together with the output of filters 306, 308, where the input to filter 308 is the input to the switching stage. Clearly the frequency of the output from the summer 310 is within the same frequency band (assumed RF band) as the input and thus output of the switching stage and this must be the frequency of operation for the modulator 302. A similar reasoned view applies if one assumes *arguendo* that the modulator operates at a frequency within an intermediate frequency band, i.e. output from summer must be at that frequency and hence the inputs to the summer are at that frequency.

The citation to col. 2, lines 41-45 refers to a modulator loop designed to operate in a frequency range of interest. Applicant is puzzled as to how a frequency range of interest can be construed to show a switching amplifier providing an amplified signal in an RF band and a DSM that processes input signals within an IF band all as claimed.

The discussion of FIG. 3 at column 3, lines 44-47, does note that the frequency content of the feedback from the switching stage is inside and outside of the loop's frequency range of interest. The following paragraph notes filter 308 selects frequency's largely outside the range of interest pursuant to facilitating loop stability. These discussions are all in the context of

Appl. No. 10/780,188
Response/Amendment dated October 5, 2005
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frequency response of the modulator operating in the loop and have nothing to do with a DSM operating at an IF frequency and controlling a switching amplifier operating at an RF frequency. The discussion of FIG. 3 in column 3 also refers to issued patent 5,777,512 (cited by applicant in IDS) as an exemplary implementation of modulator stage 302. Again Applicant is unable to find anything in this patent that shows or suggests the claimed DSM processing at an IF frequency and controlling a switch operating at an RF frequency.

Thus Applicant respectfully submits that Delano et al does not anticipate the claimed DSM processing within an IF band and controlling a switching stage amplifying a signal within an RF band as defined by claim 19. Thus and furthermore, at least by virtue of dependency, Delano et al does not anticipate claims 31, 34, and 35, which are dependent on claim 19.

In addition, Delano clearly does not show a feedback processor operable to convert a signal corresponding to the amplified signal (in RF band) to a feedback signal in the IF band as recited by claim 31. In Applicant's respectfully considered view, the feedback loop of FIG. 3 clearly does not do any conversion from the RF band to the IF band as claimed.

Therefore in view of at least the above reasons, Applicant respectfully submits that Delano et al does not show all features of claim 19 or claim 31 and hence does not anticipate claim 19 or claim 31. Applicant thus respectfully requests that the Examiner reconsider and withdraw the rejection of claims 19, 31, 34 and 35 under 35 U.S.C. 102(b) as being anticipated by Delano et al. (US Patent No. 5,909,153).

Appl. No. 10/780,188
Response/Amendment dated October 5, 2005
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d) Claims 20-30, 32-33 and 36-40 are objected to as being dependent upon a rejected base claim, but are deemed to recite allowable subject matter and would be allowable if rewritten in independent form to recite all limitations of the base claim and any intervening claims.

Applicant concurs with the Examiner in the view that these claims recite allowable subject matter and wishes to preserve the right to amend these claims if further discussions concerning the base claim prove to be unsatisfactory.

e) Claims 1-18 have been allowed over the cited references of record.

Applicant is appreciative and concurs that these claims are allowable over all known references.

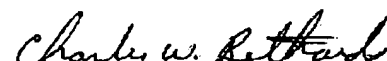
f) The prior art made of record and not relied upon is considered pertinent to applicant's disclose (see references cited on PTO-892 Form attached herewith). Applicant agrees that the present claims are allowable over the cited references.

Accordingly, Applicant respectfully submits that the claims clearly and patentably distinguish over the cited references of record and as such are to be deemed allowable. Such allowance is hereby earnestly and respectfully solicited at an early date. If the Examiner has any suggestions or comments or questions that may help move this application forward, calls are welcomed at the phone number below.

Appl. No. 10/780,188
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Although it is not anticipated that any fees are due or payable since this response is being timely filed within the 3 month time period beginning July 8, 2005 and ending October 11, 2005 (next business day after October 8, 2005) and no other fees are due or payable, the Commissioner is hereby authorized to charge any fees that may be required to Deposit Account No. 50-3435.

Respectfully submitted,


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